

1 **Amendment to the Claims**

2 **In the Claims:**

3 Claims 1-7 have not been amended, but are reproduced below for the Examiner's
4 convenience. Please also add new Claim 8, as indicated below.

5 1. (Original) A method for collecting surface plasmon resonance (SPR) spectra of an object
6 in flow, where the object has a metal film capable of exhibiting SPR, comprising the steps of:

7 (a) introducing the object into a fluid;
8 (b) introducing the fluid containing the object into a flow imaging system;
9 (c) collecting spectral SPR data corresponding to the object, the spectral SPR data
10 including at least one of:

11 (i) an entire angular spectrum corresponding to the object; and
12 (ii) an entire wavelength spectrum corresponding to the object.

13 2. (Original) A method for collecting data corresponding to interactions between a first type
14 of molecule and a second type of molecule using surface plasmon resonance (SPR) spectra,
15 comprising the steps of:

16 (a) providing a plurality of objects including a metal film capable of exhibiting
17 SPR;

18 (b) functionalizing each object in the plurality of objects by attaching at least one
19 molecule of the first type to the object, wherein the first type of molecule is selected because said first
20 type of molecule preferentially interacts with the second type of molecule;

21 (c) introducing the objects that have been functionalized into a fluid;
22 (d) introducing a plurality of molecules of the second type into the fluid, such that
23 an association phase is initiated;

24 (e) introducing the fluid containing the objects that have been functionalized and
25 the plurality of molecules of the second type into a flow imaging instrument capable of collecting
26 SPR spectral data; and

27 (f) using the flow imaging instrument to collect SPR spectral data from individual
28 objects passing through the flow imaging instrument.

29 3. (Original) The method of Claim 2, wherein the step of introducing the fluid into the flow
30 imaging instrument comprises the steps of:

1 (a) determining a length of an association period for the fluid;
2 (b) introducing the fluid into the flow imaging system at a substantially constant
3 rate for substantially the length of the association period.

4 4. (Original) The method of Claim 2, wherein the step of introducing the fluid into a flow
5 imaging instrument comprises the step of introducing a first portion of the fluid into the flow imaging
6 instrument, such that a second portion of the fluid remains.

7 5. (Original) The method of Claim 4, further comprising the steps of:

8 (a) determining a length of an association period for the fluid; and
9 (b) after the association period has expired, adding a buffer solution to the second
10 portion of the fluid, the buffer solution having been selected to induce disassociation of molecules of
11 the second type that are bound to molecules of the first type;

12 (c) introducing the second portion of the fluid with the buffer solution into a flow
13 imaging instrument capable of collecting SPR spectral data; and

14 (d) using the flow imaging instrument to collect SPR spectral data from individual
15 objects in the second portion of the fluid as the objects pass through the flow imaging instrument.

16 6. (Original) The method of Claim 5, wherein after the association period has expired, and
17 before adding the buffer solution to the second portion, further comprising the steps of:

18 (a) processing the second portion of the fluid to separate the second portion of the
19 fluid into a concentrated solution of objects and a supernatant; and

20 (b) removing the supernatant from the second portion of the fluid that was
21 processed.

22 7. (Original) The method of Claim 2, further comprising the steps of:

23 (a) collecting the objects after they have passed through the flow imaging system;
24 and

25 (b) rinsing the objects that were collected in an acid rinse, to remove any molecules of the
26 second type that remain bound to the molecules of the first type, so that the objects that were
27 collected and rinsed can be reused.

28 Please add new Claim 8 as follows:

29 8. (New) A method for collecting surface plasmon resonance (SPR) spectra of an object , in
30 a flow, comprising the steps of:

- 1 (a) introducing the object having a metal film that is capable of exhibiting SPR
2 into a fluid;
3 (b) introducing the fluid containing the object into a flow; and
4 (c) collecting spectral SPR data corresponding to the object as the object is carried
5 in the fluid by the flow, the spectral SPR data including at least one of:
6 (i) an entire angular spectrum corresponding to the object; and
7 (ii) an entire wavelength spectrum corresponding to the object.
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